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Issues of Work–Life Balance Among *JASIST* Authors and Editors

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Many dedicated scientists reject the concept of maintaining a “work–life balance.” They argue that work is actually a huge part of life. In the mind-set of these scientists, weekdays and weekends are equally appropriate for working on their research. Although we all have encountered such people, we may wonder how widespread this condition is with other scientists in our field. This brief communication probes work–life balance issues among *JASIST* authors and editors. We collected and examined the publication histories for 1,533 of the 2,402 articles published in *JASIST* between 2001 and 2012. Although there is no rush to submit, revise, or accept papers, we found that 11% of these events happened during weekends and that this trend has been increasing since 2005. Our findings suggest that working during the weekend may be one of the ways that scientists cope with the highly demanding era of “publish or perish.” We hope that our findings will raise an awareness of the steady increases in work among scientists before it affects our work–life balance even more.

Introduction

A decade ago, Guest (2002, p. 255) was already stressing that “work–life balance has become an important topic for research and policy.” We use the concept of “work–life balance” in this article in preference to that of “workaholicism,” largely because the concept of workaholicism has a more specific usage than we intend here, particularly in the areas of occupational and industrial psychology (see, e.g.,

Andreassen, Griffiths, Hetland, & Pallesen, 2012; Harpaz & Snir, 2003; Ng, Sorensen, & Feldman, 2007; van Beek, Taris, & Schaufeli, 2011). In a recent study, Wang et al. (2012) attempted to investigate this work–life balance among scientists. Instead of relying on classical methods, such as questionnaires or interviews, they suggested monitoring a routine activity for any scientist: searching the literature. Thus, they recorded the worldwide downloads of research articles published online by Springer for a period of 5 weekdays and 4 weekends in mid-April 2012. Subsequent data mining performed on the 1,800,000+ downloads suggested that many scientists worked overtime, especially during the weekends. More recently, Magnone (2013) examined the publication records of 660,191 scientific articles published from 1990 to 2010 and available from Elsevier’s *ScienceDirect* to show that scientists published practically every day of the week, including weekends and holidays. Although the methods used by these authors are appealing with regard to their original use of publicly available metadata to better understand the rhythms of scientists’ lives, at least three caveats should be raised concerning their assumptions:

- An unknown number of downloads may have been performed by programs instead of people. For instance, web search engines rely on indexing programs that harvest the contents of web pages. This may explain the “extremely abnormal” number of downloads that were recorded by Wang et al. (2012) for Tianjin city during a 10-minute time. These outlying values were eventually discarded. Still, less aggressive programs may have performed downloads that might not have been detected and then discarded from the study.
- Downloading an article does not always imply that it is read. For instance, scientists may download articles in their office

at the university before going home, simply because most of Springer's articles lie behind a pay wall whose access is granted only to university networks. As a result, the number of people working during the weekends might have been underestimated.

- Finally, the 9-day life span of the study by Wang et al. (2012) may have been too short a period to obtain results that would apply to the whole year. Our own study (see later) and that of Magnone (2013) show that special events (e.g., conference deadlines, spring breaks, national holidays) may have biased their study.

In this brief communication, we intend to investigate the work–life balance of scientists while overcoming some of the above concerns. Unlike Wang et al. (2012), we do not rely on real-time downloads as a trace of scholarly dedication to work. We rely instead on the analysis of the publication history printed on every published article. This informs the reader about when the article was originally submitted, revised for the last time following the referees' comments, and then accepted by the journal's editor. Of course, these events may happen on weekdays, weekends, and during public holidays.

Nonetheless, it seems reasonable to assume that there is no actual rush to submit or revise a journal paper as far as the authors are concerned, although some might like to get on with it because of upcoming commitments. Likewise, there is no rush to accept a paper as far as editors are concerned. Yet, despite these factors, the data suggest that many authors and editors will be working during the weekend. We believe that working during the weekend on tasks that could be deferred without serious consequences until the next week starts (i.e., 2 days later at most) can be considered as an example of scientists maintaining an inappropriate work–life balance. This brief communication reports on the traces of these problems that we found among the *JASIST* community. We hope that our findings will raise awareness of the steady increase in weekend working among such scientists and how this might affect their work–life balance in the long run.

Data and Method

This study relies on publication metadata that are publicly available on the *JASIST* website.¹ Besides appearing on the first page of each *JASIST* publication, the “publication history” of papers published since 2001 is also provided on their dedicated web pages. Histories are composed of the following metadata, with example values from Oyarce (2008):

- Manuscript received: 24 JUN 2007
- Manuscript revised: 31 DEC 2007
- Manuscript accepted: 1 JAN 2008
- Article first published online: 14 MAY 2008
- Issue published online: 9 JUN 2008

¹[http://onlinelibrary.wiley.com/journal/10.1002/\(ISSN\)1532-2890/issues](http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1532-2890/issues)

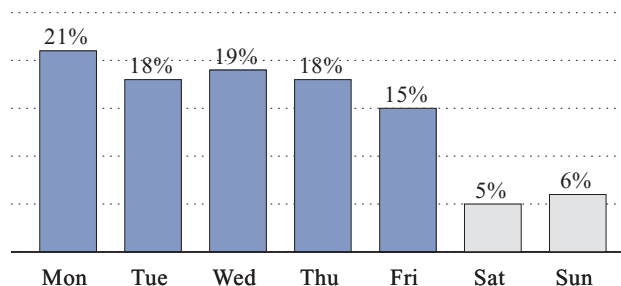


FIG. 1. Percentages of new submissions posted by authors by days of the week (percentages are rounded). [Color figure can be viewed in the online issue, which is available at wileyonlinelibrary.com.]

Note that these dates are assigned by *JASIST*'s editorial manager (called *ScholarOne*²) upon manuscript reception, revision, and acceptance with no third person involved.

Our study is concerned with the first three fields: dates of manuscript submission, revision, and acceptance. Articles published in *JASIST* usually go through two or three rounds of revision (Cronin, 2009b, 2011). Notice, however, that only the date of last revision before acceptance is provided in print and online issues.

We extracted the publication histories of the 2,402 articles that were included in issue 52(5) of 2001 to issue 63(11) of 2012. Notice that publication histories were inconsistently reported before issue 52(5). Next, 839 articles with missing dates for one or more of the considered fields were discarded. These were mostly book reviews, editorials, errata, letters to the editor, and obituaries. Another 30 articles were discarded because of chronological flaws. For instance, Kim (2009) appeared to have revised her manuscript (28 APR 2008) before she initially submitted it (26 SEP 2008). Eventually, we determined the day in the week for the remaining 1,533 valid *JASIST* papers. All these data are released as online supporting information (Appendix S1).

Results

We first discuss how author- and editor-related events are distributed across weekdays and weekends. Then we take a broader perspective in studying these events longitudinally to determine whether there have been any increases in weekend working over time.

Daily Submissions of *JASIST* Authors

If authors consider all days equally appropriate for work, then the distribution of the original submissions per day would be uniform. This is clearly not the case, as the distribution is positively skewed instead (Figure 1). Weeks are clearly divided into two parts according to these data. Authors initially submit their papers more during weekdays than during weekends. Nonetheless, there is a slight decline

²<http://mc.manuscriptcentral.com/jasist>

in the number of submissions as the week elapses, and weekends show 11% of all incoming submissions.

The distribution of the final revised versions received per day (Figure 2) is similar to the distribution of initial submissions. Revised versions were also posted throughout the week, but with a slight preference for the beginning of the week. Again, several authors spent parts of their weekends revising and submitting papers, because 11% of the completed versions were posted on Saturday and Sunday.

We wondered whether the submissions and revisions happening during the weekends were higher for single authors. It might be expected that weekends would be chosen more by single authors to advance their research, as they might enjoy the lack of interruptions from family, coworkers, other clerical work, or teaching duties. Among the 1,533 articles under study, 29% ($n = 449$) are single-authored articles. However, the significant and strong relationship ($r^2 = 0.98$, $p < 0.001$) between the distributions of revised and submitted articles of multiauthored versus single-authored articles does not support this hypothesis: The rhythms of solo versus collaborative researchers do not differ significantly.

Our study of submission and final revision dates thus revealed some trends among *JASIST* authors. It must be remembered that there is no deadline for submitting a paper to *JASIST*, and authors are allotted a whole year to improve and resubmit their manuscript. Thus, there is no time pressure (i.e., no rush) in submitting or revising papers. And yet, 11% of submissions and revisions happen during weekends.

Weekend Working Among *JASIST* Editors

Two editors-in-chief managed *JASIST* during the period under study (2001–2012). Donald H. Kraft served from 1985 to 2008 (Meadow, 1984), and then Blaise Cronin took over in 2009 (Cronin, 2009a). The distribution of the acceptance dates by the two editors (Figure 3) shows a peak on Mondays. This peak may result from them handling authors' revisions submitted during the previous weekend. Traces of weekend working were also found among *JASIST* editors. Figure 3 suggests that editors sent 7% of all notifications of acceptance during weekends. Unfortunately, there is no way to refine this

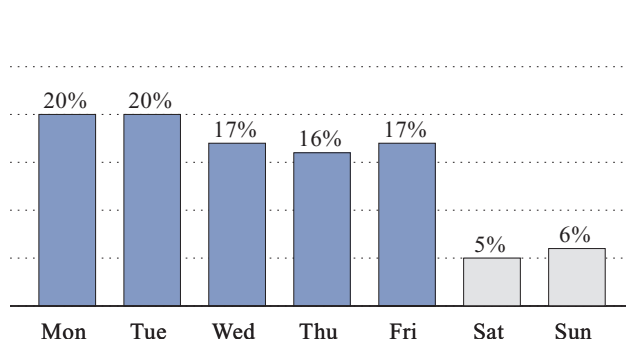


FIG. 2. Percentages of final submissions posted by authors by days of the week (percentages are rounded). [Color figure can be viewed in the online issue, which is available at wileyonlinelibrary.com.]

study by differentiating when rejection happened: directly without review (about 30% of the time according to Cronin [2009b]) or after several rounds of review. However, a final example of anecdotal yet indisputable evidence of working during the holidays lies in three articles (Lazarinis, 2007; Stvilia, Gasser, Twidale, & Smith, 2007; Talja, Vakkari, Fry, & Wouters, 2007). These three *JASIST* articles were accepted on December 25, 2006, which is a national holiday in the U.S. home of the journal's editor-in-chief.

Longitudinal Study of Changes in Work–Life Balance in *JASIST*

Having found evidence of issues of work–life balance in the *JASIST* community, we wondered about the evolution of this condition among authors—the case of *editors* would include too few people to be informative, and moreover, such people are deemed to be incurable workaholics (Aguinis et al., 2010)!

Figure 4 shows the distribution of original submissions and final revisions from authors across weekdays and weekends for 2001 through 2012. Although the weekends used to be quiet up until 2004, the data suggest an increase in paper submissions and revisions during the weekends since then. This phenomenon has been increasing by an average of 3% a year since 2009. Overall, the number of submissions and revisions during weekends has been increasing by a 1% margin per year, as shown by the linear regression plotted as a solid line, and this year (2012) it reached 20%. The findings of this study complement those of Wang et al. (2012), who probed research activity in April 2012 through the study of paper downloads from Springer's digital library. Although seeking to explain this phenomenon is beyond the scope of this study, we may speculate that the globally increasing pressure to “publish or perish” is a factor producing these hardworking weekenders (Garfield, 1996).

Limitations

This study has mined publication histories to raise our understanding of the work–life balance of scientists. It

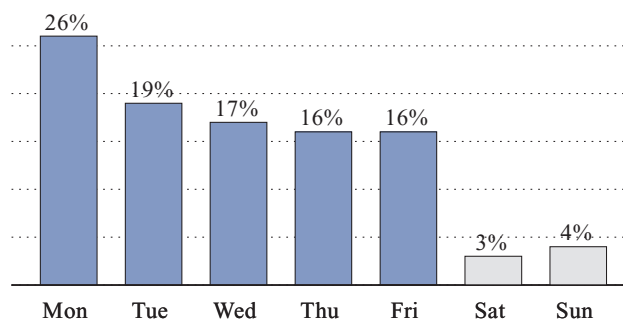


FIG. 3. Composite data from two *JASIST* editors showing the percentages of manuscript acceptances by days of the week (percentages are rounded). [Color figure can be viewed in the online issue, which is available at wileyonlinelibrary.com.]

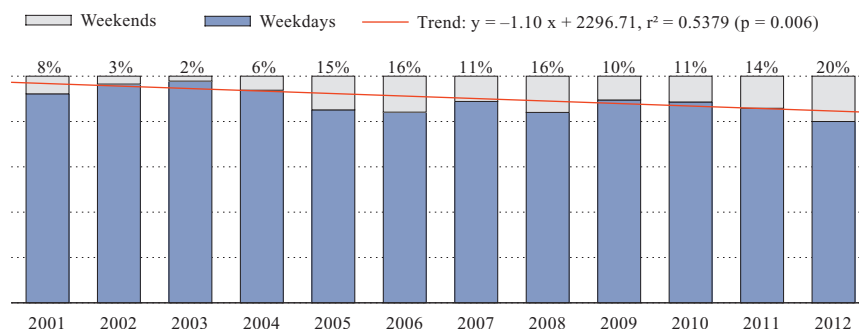


FIG. 4. Evolution of the percentages of new submissions and final submissions posted by authors during weekdays and weekends between 2001 and 2012. [Color figure can be viewed in the online issue, which is available at wileyonlinelibrary.com.]

should be stressed, however, that the dates that we retrieved must be considered in the light of *ScholarOne*, whose server is located in New Jersey, according to the traceroute command.³ We also know from Cronin (2010, 2012) that more than 50% of the *JASIST* papers come from outside the United States. For authors who were in different countries and time zones than *ScholarOne*'s (i.e., UTC +5), the date d recorded by the system may differ from the date d' experienced by the author in his or her time zone by a 1-day margin at most, that is, $d - d' \in \{-1, 0, 1\}$. For instance, a manuscript submitted from France by the first author (a workaholic scientist) on Saturday at 4 a.m. would get recorded on Friday at 10 p.m. in New Jersey. Unfortunately, we were unable to account for difference in countries and time zones, because exact timestamps and *ScholarOne* user location at submission, revision, or acceptance are undisclosed. We do not think that this particular problem is likely to have affected our results a great deal, but the possibility has to be borne in mind.

No doubt, our study actually underestimates the amount of work completed by *JASIST* authors, as we only assessed this through a weekday versus weekend dichotomy (and we assumed that it is universal practice to rest during the weekend when, of course, in some cases it may not be so). Furthermore, some authors may have submitted papers during weekdays when they are on holiday. Ladle, Malhado, and Todd (2007), for instance, using Google Scholar, found a 600% increase in the number of submissions received on Christmas Day in 2006 compared with the same day in 1996. The paper by Oyarce (2008) provides yet another extreme example of a dedicated author and editor. According to our data, this revised *JASIST* paper was submitted on December 31, 2006, and accepted on January 1, 2007!

Summary and Conclusion

This brief communication has investigated the work–life balance of scientists from the perspective of their publication histories. We have focused on the case of *JASIST*

authors and editors. Appendix S1 presents the data that we collected and releases it as an online supporting information. A dichotomy between weekdays and weekends was introduced as a proxy for “work” and “life.” Possible evidence of increases in “work” at the expense of “life” was recorded for submissions, revisions, and acceptance of manuscripts during the weekends. It was assumed that the work could normally have been deferred to the following week because *JASIST* does not set any deadlines for paper submission and allots a whole year to researchers for revision. Nonetheless, we found that 11% of manuscript-related events happened during the weekends. This finding is in accord with Wang et al.'s (2012) results about overworking scientists. Finally, our longitudinal study of the past decade showed that working during weekends has been increasing among *JASIST* authors since 2005. We hope that the light we have shed on these issues will raise readers' awareness of these problems and how they might affect them. But it is hard not to forget that, for some:

Work is play when it's something you like.

Andy Warhol (1928–1987)

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³<http://www.openbsd.org/cgi-bin/man.cgi?query=traceroute>

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Supporting Information

Additional supporting information may be found in the online version of this article:

Appendix S1. *JASIST* 2001–2012.